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## Muller and mutations: mouse study of George Snell (a postdoc of Muller) fails to confirm Muller's fruit fly findings, and Muller fails to cite Snell's findings

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### Abstract

In 1931, Hermann J. Muller's postdoctoral student, George D. Snell (Nobel Prize recipient--1980) initiated research to replicate with mice Muller's X-ray-induced mutational findings with fruit flies. Snell failed to induce the two types of mutations of interest, based on fly data (sex-linked lethals/recessive visible mutations) even though the study was well designed, used large doses of X-rays, and was published in *Genetics*. These findings were never cited by Muller, and the Snell paper (Snell, *Genetics* 20:545-567, 1935) did not cite the 1927 Muller paper (Muller, *Science* 66:84, 1927). This situation raises questions concerning how Snell wrote the paper (e.g., ignoring the significance of not providing support for Muller's findings in a mammal). The question may be raised whether professional pressures were placed upon Snell to downplay the significance of his findings, which could have negatively impacted the career of Muller and the LNT theory. While Muller would receive worldwide attention, and receive the Nobel Prize in 1946 "for the discovery that mutations can be induced by X-rays," Snell's negative mutation data were almost entirely ignored by his contemporary and subsequent radiation genetics/mutation researchers. This raises questions concerning how the apparent lack of interest in Snell's negative findings helped Muller professionally, including his success in using his fruit fly data to influence hereditary and cancer risk assessment and to obtain the Nobel Prize.

**Keywords:** Cancer risk assessment; Hermann J. Muller; Mutation; Radiation; Scientific misconduct; X-rays.

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